
Book Review

***Research Handbook on International Marine Environmental Law*. Edited by Rosemary Rayfuse, Aline Jaeckel, and Natalie Klein. 2nd ed. Cheltenham: Edward Elgar, 2023. pp. 492.**

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The ‘Research Handbook on International Marine Environmental Law’ now stands as a seminal work. This updated compilation of 20 chapters by leading scholars explores the multifaceted realm of international marine environmental law. It offers a timely and authoritative examination of this vital field.¹ The book’s structure comprises five distinct parts, each addressing pivotal aspects of marine environmental regulation. A representative selection of chapters helps to illustrate the distinctiveness of each part.

In Part I, the book scrutinises the adequacy of the current global regime for marine environmental protection. Churchill evaluates the Law of the Sea Convention (LOSC) and its role and limitations in addressing marine environmental issues. He underscores the imperative for more than just legal enhancements, advocating for substantial shifts in human behaviour.² Proelss echoes this sentiment, emphasising that the main problem is not the law itself, but the lack of implementation and enforcement by States, and the need for human behaviour change.³

Part II provides a closer examination of the underlying principles and mechanisms of marine environmental law at both global and regional levels. Tanaka explores four fundamental principles governing marine environmental protection: no harm, sustainable development, precaution, and cooperation. Nevertheless, Tanaka posits that these principles alone may not suffice, calling for more

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¹ Rosemary Rayfuse, Aline Jaeckel and Natalie Klein (eds), *Research handbook on international marine environmental law*, 2nd edn. (Edward Elgar Publishing 2023)

² Robin Churchill, ‘The UN Convention on the Law of the Sea - still relevant to protection of the marine environment?’, *Research Handbook on International Marine Environmental Law*: (Second edn, Edward Elgar Publishing 2023) 56.

³ Alexander Proelss, ‘Fragmentation and coherence in the legal framework for the protection of the marine environment’, *Research Handbook on International Marine Environmental Law* (Second edn, Edward Elgar 2023) 78.

‘specific norms’.⁴ Harrison supports this by identifying gaps in compliance mechanisms within several regional seas treaties. He suggests that these gaps could be filled by drawing on the experiences of compliance mechanisms in other relevant regimes. He then advocates for dedicated attention and experimentation with different approaches to reduce non-compliance.⁵ Klein and McCreath also highlight the importance of scientific evidence and expert involvement in establishing a breach of international law. In their chapter, they underscore the challenges in remedying damage to the marine environment, noting that calculating and paying for ‘pure environmental damage’ is contested and elusive. They suggest that the focus should be on remediation of the marine environment rather than just settling political differences or recalibrating economic concerns.⁶

Part III shifts its focus to marine pollution and its connection to greenhouse gas emissions. Henriksen suggests the establishment of a scientific advisory body within the International Maritime Organisation (IMO) to elevate the role of science in decision-making.⁷ However, he also acknowledges the challenges of avoiding politicisation. Harrould-Kolieb and Stephens further advocate for a more coordinated and purposeful approach to addressing ocean acidification under international law. They emphasise the need for more explicit recognition of ocean acidification in existing treaties, as well as for greater coordination between different environmental regimes.⁸

Part IV delves into the intricacies of marine biodiversity conservation and utilisation. Lodge focuses on the governance of international marine environments, particularly for migratory species. He highlights the work of the Convention on Migratory Species, which has pioneered innovative approaches to international biodiversity conservation. However, he notes that these efforts are often hindered by inadequate funding and regulatory congestion.⁹ Rayfuse discusses the negotiations on the access and benefit sharing of marine genetic resources in areas beyond national jurisdiction (ABNJ). She explains that there are different views on the legal status, definition, and scope of marine genetic resources, as well as on the rules and

⁴ Yoshifumi Tanaka, ‘Basic principles of international marine environmental law’, *Research handbook on international marine environmental law* (Second edn, Edward Elgar 2023) 102.

⁵ James Harrison, ‘Compliance mechanisms under treaties relating to protection of the marine environment’, *Research Handbook on International Marine Environmental Law* (Second edn, 2023) 123.

⁶ Natalie Klein and Millicent McCreath, ‘Resolving international disputes concerning the marine environment’, *Research Handbook on International Marine Environmental Law* (Second edn, Edward Elgar 2023) 149.

⁷ Tore Henriksen, ‘Regulating shipping under conditions of uncertainty: The Arctic Ocean and knowledge-based decision-making’, *Research Handbook on International Marine Environmental Law* (Second edn, Edward Elgar 2023) 239.

⁸ Ellycia Harrould-Kolieb and Tim Stephens, ‘Ocean acidification’, *Research Handbook on International Marine Environmental Law* (Second edn, Edward Elgar 2023) 287.

⁹ Michael Lodge, *Protecting the marine environment of the deep seabed* (Edward Elgar 2023) 359.

mechanisms for sharing benefits from their use. She highlights that the main motivation for these negotiations is the potential economic value of marine genetic resources, but also notes that there is uncertainty about their actual market prospects.¹⁰

Part V explores the role of science, technology, and emerging tools in marine environmental protection. Woker, Holst, and Harden-Davies emphasise the role of technology as a tool. They underscore the need for corresponding human, institutional, and financial capacity to support new technologies such as satellite remote sensing for monitoring and regulatory enforcement of fishing activities.¹¹ Becker-Weinberg supports this view by observing that the lack of a binding ‘overarching legal framework’ hinders the use of Marine Spatial Planning (MSP) and Marine Protected Areas (MPAs) for marine environment protection. Without a holistic, ecosystem-based approach to ocean governance, Becker-Weinberg warns that the effectiveness of MSP, MPAs, and other tools is limited.¹²

These overarching themes of the book merit a few points of reflection. The editors aspire to adopt a ‘less siloed and more integrative approach by considering the impacts of cross-cutting issues such as legal fragmentation, public participation, new technology, and climate change on the particular areas of study’.¹³ This reference to interdisciplinarity is really a reference to the need to develop a new discipline to deal with environmental problems. However, does the present book offer a new ‘ambitious intellectual paradigm of environmental studies’?¹⁴ Perhaps not, as the book is a research handbook intended to offer a representative analysis of the ‘current and emerging issues of concern in the design and implementation of effective regulation of human activities that perturb the marine environment’.¹⁵

One wonders, however, whether more thought could be given to the legal systems relationship with cross-cutting issues such as expert opinion and public participation. The editors observe that a key challenge for international marine environmental law in the 21st century is to moderate between the development and environment agendas. They also highlight the challenge of promoting and developing integrated cross-sectoral cooperation, collaboration and coordinated approaches that balance our use of

¹⁰ Rosemary Rayfuse, ‘Protecting marine biodiversity and vulnerable marine ecosystems’, *Research Handbook on International Marine Environmental Law* (Second edn, Edward Elgar 2023) 331.

¹¹ Hilde J Woker, Rozemarijn J Roland Holst and Harriet Harden-Davies, ‘New technology and the protection of the marine environment’, *Research Handbook on International Marine Environmental Law* (Second edn, Edward Elgar 2023) 427.

¹² Vasco Becker-Weinberg, ‘Enhancing marine protected areas and marine spatial planning through an ecosystem approach’, *Research Handbook on International Marine Environmental Law* (Second edn, Edward Elgar 2023) 465.

¹³ Rosemary Rayfuse, Aline Jaeckel and Natalie Klein (n 1) xi.

¹⁴ Elizabeth Fisher and others, ‘Maturity and methodology: starting a debate about environmental law scholarship’ (2009) 21 *Journal of Environmental Law* 213.

¹⁵ Rosemary Rayfuse, Aline Jaeckel and Natalie Klein (n 1) xii.

the oceans with their protection and conservation for current and future generations.¹⁶

I would add that a key challenge for the legal system specifically is to work out how law facilitates cognitive learning and adaptation, but in a way that also stabilises normative expectations.¹⁷ This is pivotal as comprehending how law balances these two aspects is key to understanding law's problem-solving capacity. Overlooking this structural function of law can lead to misleading assumptions that integrating more information and expertise is the solution. At times, this perception is conveyed by the book. However, more information does not necessarily lead to more clarity and reliability, but simply to even more information demands. What transpires if new information cannot be manageably juridified into the legal system in ways that maintain social stability? Does this not risk undermining the normative nature of law? The otherwise overlooked sociological query then becomes: under what circumstances can law facilitate conditions that enable states and other international actors to learn from and act on specific types of knowledge? And under what conditions can law simultaneously legitimise decisions, that is, permit ignorance of certain facts for the sake of legal stability? For example, under what conditions can law permit ignorance of monetary motives and the 'perceived lucrative markets for products derived from marine genetic resources'?¹⁸

In all, 'Research Handbook on International Marine Environmental Law' is a meticulously crafted work that should be essential reading for anyone interested in the field. Its detailed exploration of marine environmental law serves as a valuable resource for students, academics, and professionals. While the book refrains from sociological questions like how legal norms function to stabilise expectations, it does engage with normative enquiries. It emphasises the need to uphold normative values, such as the principles of good governance of Marine Scientific Research. These principles include 'transparency and openness in communicating with the public, public participation in law and policy formation, accountability, effectiveness in achieving goals and outcomes, and coherence amongst laws, institutions, and policies.'¹⁹ Undoubtedly, this is crucial, which is why the book stands as a testament to the urgency of effective marine environmental protection.

¹⁶ Rosemary Rayfuse, Aline Jaeckel and Natalie Klein, 'International marine environmental law in the 21st century', *Research Handbook on International Marine Environmental Law* (Second edn, 2023) 3.

¹⁷ Niklas Luhmann, *Law as a Social System* (Oxford University Press 2004).

¹⁸ Rayfuse, (n 10).

¹⁹ Anna-Maria Hubert, 'Marine scientific research and the protection of the seas and oceans', *Research Handbook on International Maritime Environmental Law* (Edward Elgar 2023) 394.